



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<b>(51) International Patent Classification <sup>5</sup> :</b> <b>B65D 81/32, A47L 13/17</b> <b>A45D 37/00</b>	<b>A1</b>	<b>(11) International Publication Number:</b> <b>WO 93/10019</b> <b>(43) International Publication Date:</b> 27 May 1993 (27.05.93)
<b>(21) International Application Number:</b> PCT/GB92/02085 <b>(22) International Filing Date:</b> 11 November 1992 (11.11.92)  <b>(30) Priority data:</b> 9124364.2 15 November 1991 (15.11.91) GB  <b>(71)(72) Applicant and Inventor:</b> FARMER, Harley [GB/GB]; 47 Common Lane, Hemmingford Abbots, Cambridge PE18 9HW (GB).  <b>(74) Agent:</b> P.A. MAGUIRE & CO.; 12 The Broadway, St. Ives, Cambridge PE17 4BN (GB).  <b>(81) Designated States:</b> AT, AU, BB, BG, BR, CA, CH, CS, DE, DK, ES, FI, GB, HU, JP, KP, KR, LK, LU, MG, MN, MW, NL, NO, PL, RO, RU, SD, SE, US, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, SN, TD, TG).		<b>Published</b> <i>With international search report.</i>
<b>(54) Title:</b> MULTI-COMPARTMENT PACKAGE  <div style="text-align: center;"> </div> <b>(57) Abstract</b> <p>A multi-compartment package (1) characterised by a first compartment (2) containing a liquid component (3) and a second compartment (4) containing a powder component (5) and means actuatable to permit the two compartments (2, 4) to communicate to allow mixing of the powder component (5) with the liquid component (3), and characterised in that one of the compartments (2, 4) also contains a textile component (6) which is impregnated with the liquid mixture before the package is opened. In a preferred embodiment, the liquid component is water, the powder component is a disinfectant and the textile component is a wiping cloth.</p>		

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TITLE:     MULTI-COMPARTMENT PACKAGE

DESCRIPTION

Technical Field

The invention relates to a multi-compartment package arranged such that components in the compartments can be stored separately and can be introduced to one another at the time of use and before the package is opened.

Background Art

Many such packages are known and are used, for example, to store chemical compounds which react together when mixed.

It is an object of the invention to provide a portable multi-compartment package to overcome a problem which exists in the storage of disinfectants for personal use in emergency situations so that minor wounds can be treated quickly in the field as a temporary or first aid measure.

Disclosure of the Invention

According to the invention a package has a first compartment containing a liquid component, a second compartment containing a powder component and means actuatable to permit the two compartments to communicate to allow mixing of the powder component with the liquid component, wherein one of the compartments also contains a textile component which is impregnated with the liquid mixture before the package is opened.

After opening the impregnated textiles component can thus be employed as a wiping cloth.

From one aspect the invention is a package having a

rupturable partition separating the two compartments. As an alternative to a rupturable partition, the two compartments could be separated by a removable clip, in a case where the package is sufficiently flexible to allow the clip to deform the package into two separate compartments. Thus in use the clip can be removed so that the powder can be dispersed in the liquid and the resulting liquid mixture impregnated into the textiles material before the package is opened.

The textiles component may be in the form of a wiping cloth which may be of a non-woven textiles material. The powder component may be a disinfecting composition which may contain a bactericide and/or a viricide and/or a fungicide or the like. Such compositions are described in the specification of U.K. Patent GB-A-2164851 of T.R. Auchincloss. The liquid component may be water.

The package is preferably in the form of a sachet made from flexible sheet material e.g. plastics sheet which may be heat sealed to form the compartments. The rupturable partition may be of plastics sheet and may be rupturable by being relatively thin as compared with the sheets forming the exterior layers of the package. U.K. Patent specification GB-A-2122166 of B.R. Pike describes such a rupturable partition. Alternatively the package may be formed with a reduced thickness weakened portion or a mechanically weakened portion e.g. a scoreline, or alternatively may be formed with a weakened section of seal between the two compartments.

If desired the package may be transparent, at least in part. The compartments of the package may be disposed end-to-end in which case they could be separated by a weakened seal or, if desired, by a removable clip which squeezes the package flat at an intermediate position to form the two compartments. As an alternative the package may be composed of three superposed layers of plastics material which are heat-sealed about their peripheries to form two superposed compartments. In this case the intermediate layer can form a rupturable membrane.

#### Brief Description of the Drawings

The invention is diagrammatically illustrated, by way of example, in the accompanying drawing which shows a side view of a transparent package composed of two compartments disposed end-to-end.

#### Best Mode for Carrying Out the Invention

Referring to the drawing there is provided a portable package 1 for emergency field use made from flexible heat-sealed plastics sheet comprising a first compartment 2 containing water 3 and a second compartment 4 containing a powder disinfectant 5 of the kind described in GB-A-2164851 and a textile wiping cloth 6. The package is in the form of a sachet formed from two superposed layers of plastics 7,8 heat-sealed about their peripheries 9,10 and at an intermediate position 11 to form the two compartments 2,4. The intermediate seal 11 is arranged to be weak so that it can be ruptured to allow communication between the two compartments 2,4; see GB-A-2122166. When the two

compartments 2,4 are permitted to communicate the powder disinfectant 5 is dispersed in the water 3 and the resulting liquid disinfectant impregnates the wiping cloth 6 before the package is opened by tearing or cutting the outer layers 7,8. Thus a disinfectant wipe is available for topical application allowing the treatment of minor wounds quickly and easily.

Although in the drawing the two compartments of the sachet are disposed end-to end, as an alternative the two compartments of the sachet may be superposed.

In the latter arrangement the sachet may comprise a package consisting of three superposed layers of plastics sheet which are heat-sealed around their edges to form a two compartment envelope, the two outer layers being relatively tough compared to the intermediate layer of sheet. Thus in use the intermediate layer can be ruptured to allow communication between the two compartments for the reason aforesaid.

Although the package illustrated is formed of transparent material it will be appreciated that other materials, such as plastic-backed foil, may be employed.

#### Industrial Applicability

The embodiment of the invention particularly described with reference to the drawing thus provides a portable multi-compartment package which is compact and easy to use.

CLAIMS

1. A multi-compartment package (1) characterised by a first compartment (2) containing a liquid component (3) and a second compartment (4) containing a powder component (5) and means actuatable to permit the two compartments (2), (4) to communicate to allow mixing of the powder component (5) with the liquid component (3), and characterised in that one of the compartments (2), (4) also contains a textiles component (6) which is impregnated with the liquid mixture before the package is opened.
2. A multi-compartment package according to claim 1, characterised in that the actuatable means is a rupturable partition (11).
3. A multi-compartment package according to claim 1, characterised in that the actuatable means is a removable clip.
4. A multi-compartment package according to any one of claims 1 to 3, characterised in that the textile component (6) is in the form of a wiping cloth.
5. A multi-compartment package according to any preceding claim, characterised in that the powder component (5) is a disinfecting composition which may contain a bactericide and/or a viricide and/or a fungicide.
6. A multi-compartment package according to any preceding claim, characterised in that the liquid component (3) is water.
7. A multi-compartment package according to any preceding claim, characterised in that the package is in the form of

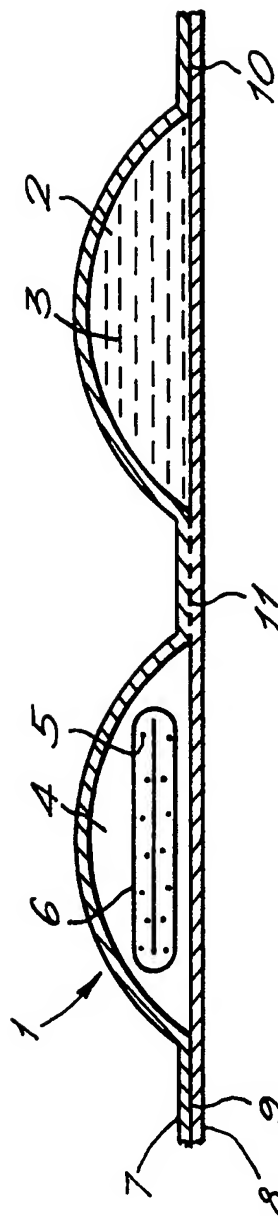
a sachet made from flexible sheet material, e.g. plastics.

8. A multi-compartment package according to claim 7, characterised in that the flexible sheet material is heat sealed to form the compartments (2), (4).

9. A multi-compartment package according to any preceding claim, characterised in that the compartments (2), (4) are disposed end-to-end.

10. A multi-compartment package according to any preceding claim, characterised in that the compartments (2), (4) are superposed.





## INTERNATIONAL SEARCH REPORT

PCT/GB 92/02085

International Application No

<b>I. CLASSIFICATION OF SUBJECT MATTER</b> (If several classification symbols apply, indicate all) <sup>6</sup>		
According to International Patent Classification (IPC) or to both National Classification and IPC Int.Cl. 5 B65D81/32; A47L13/17; A45D37/00		
<b>II. FIELDS SEARCHED</b>		
Minimum Documentation Searched <sup>7</sup>		
Classification System	Classification Symbols	
Int.Cl. 5	B65D ; A47L ; A45D ; A61F	
Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched <sup>8</sup>		
<b>III. DOCUMENTS CONSIDERED TO BE RELEVANT<sup>9</sup></b>		
Category <sup>10</sup>	Citation of Document, <sup>11</sup> with indication, where appropriate, of the relevant passages <sup>12</sup>	Relevant to Claim No. <sup>13</sup>
Y	FR,A,1 202 856 (BRETONNIER ET AL.) 14 January 1960 see the whole document ---	1,4-5, 7-9
Y	WO,A,9 002 166 (FIBRE TREATMENTS) 8 March 1990 see page 2, line 23 - line 32 ---	1,4-5, 7-9
A	---	6
A	FR,A,2 423 413 (LABBE) 16 November 1979 see page 1, line 18 - line 34 ---	2,8-9
A	EP,A,0 313 851 (B. BRAUN MELSUNGEN) 3 May 1989 see abstract ---	3
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<p><sup>10</sup> Special categories of cited documents:</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</p> <p>"A" document member of the same patent family</p>		
<b>IV. CERTIFICATION</b>		
Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report	
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III. DOCUMENTS CONSIDERED TO BE RELEVANT (CONTINUED FROM THE SECOND SHEET)		
Category <sup>a</sup>	Citation of Document, with indication, where appropriate, of the relevant passages	Relevant to Claims No.
A	US,A,3 756 389 (FIRTH) 4 September 1973 see column 1, line 68 - column 2, line 16; figure 2 -----	10

**ANNEX TO THE INTERNATIONAL SEARCH REPORT  
ON INTERNATIONAL PATENT APPLICATION NO.**

GB 9202085  
SA 66522

This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report.  
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21/01/93

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
FR-A-1202856		None	
WO-A-9002166	08-03-90	AU-A- 4067389 EP-A- 0431002 JP-T- 4501125	23-03-90 12-06-91 27-02-92
FR-A-2423413	16-11-79	None	
EP-A-0313851	03-05-89	DE-C- 3736487 JP-A- 1160558	10-11-88 23-06-89
US-A-3756389	04-09-73	None	

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82